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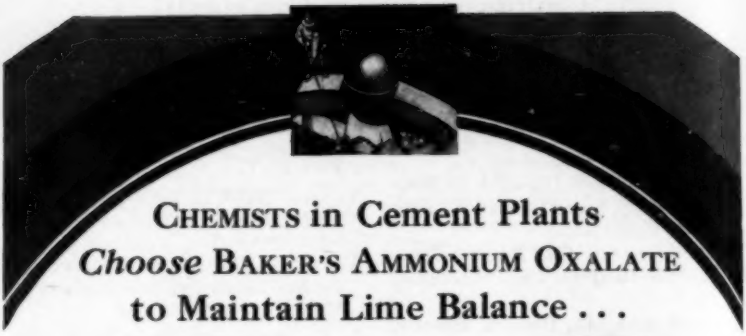

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1933 Award
to
HENRY CLAPP SHERMAN

"For noteworthy and outstanding service to the science of chemistry and the profession of chemist in America."

Past Medalists

1926 WILLIAM BLUM
1927 LAFAYETTE B. MENDEL
1929 MR. AND MRS. FRANCIS PATRICK GARVAN
1930 GEORGE EASTMAN
1931 ANDREW W. AND RICHARD B. MELLON
1932 CHARLES H. HERTY

Chemist and Colleague*

By Marston T. Bogert

A distinguished fellow-professor gives his impressions of Henry C. Sherman. How a teacher and researcher also acts as executive at the head of a great chemistry department.

THE award to Henry Clapp Sherman of the 1933 medal of The American Institute of Chemists, "for his outstanding researches in the chemistry of food and nutrition, and his services to the profession through the training of chemists," bestows honor where honor is due, and adds another distinguished name to an already remarkable list of medalists. The universal approbation, both here and abroad, which greeted the announcement of the selection of Dr. Sherman for this high recognition, is the best possible proof of the wisdom of the choice and must bring great happiness to the recipient, as it does to his host of friends.

The life and numerous activities of the medalist have been presented so admirably, so completely, and in such detail, in the biographical articles published in the March number of THE CHEMIST, and in the April issue of the *Percolator*, with both of which you are of course familiar, that there is left little for your speaker to add, save a few personal touches, reminiscences, or side-lights, as a colleague who has worked shoulder to shoulder with Dr. Sherman since he entered Columbia nearly thirty-eight years ago.

In those early days, I well remember his keen interest in the nutritional investigations conducted by the late Professor Atwater, at Wesleyan University, and his association therewith. Atwater was a friend

* An address delivered at a luncheon of The American Institute of Chemists, The Chemists' Club, New York, N. Y., May 20, 1933.

whom I met quite frequently at chemical gatherings, and he was always most eulogistic concerning Sherman and his work.

The organization of our department of chemistry then was quite different from what it is today. The school itself was still known as the School of Mines, and chemistry included chemical engineering (applied or industrial chemistry) and also assaying. The sub-department of analytical chemistry and assaying was in charge of Pierre de Peyster Ricketts, of the assaying firm of Ricketts and Banks, this city, who retired from his professorship in 1898 and was succeeded by Edmund Howd Miller. Part of the regular work under Dr. Miller consisted in the proximate analysis of various organic products, including foodstuffs; and it was this phase of the work which appealed to Sherman strongly and of which he was given charge. From this as a beginning, he gradually developed not only a food analysis course, but was requested by Professor Chandler to take over also the lectures on food industries which were given as part of the curriculum in industrial chemistry. Later this became the nucleus of a well-rounded course in the chemistry of food and nutrition as the former assistant in chemistry rose steadily in rank until he succeeded his former teacher, Charles F. Chandler, as Mitchill Professor of Chemistry, a succession which seems eminently appropriate when we recall Dr. Chandler's long service as president of the Metropolitan Board of Health and his deep and abiding interest in everything which concerned the food supply of the city.

When, in 1911, after forty-six years at Columbia, Professor Chandler withdrew from active duty, the speaker served as executive officer of the department for a year, until we succeeded in inducing Alexander Smith of the University of Chicago to take the place. Upon Dr. Smith's retirement and death, Professor Sherman was appointed executive officer in 1919; and he has acted in that capacity ever since.

IN THE first few years following Smith's arrival at Columbia, he was not very enthusiastic about Sherman's activities, particularly his animal-feeding experiments, because he knew very little about such work, and because at that time there did not seem to be enough mathematics or chemistry about it to suit him. Later, however, he began to understand it better and to appreciate it at its real worth, as he did also the personality of the man who was responsible for it.

As you all know, our medalist's major contributions as a scientific investigator and author have been in food and nutrition, enzymes and vitamins; and in this chosen field no name today ranks higher than that of Sherman. The importance of his services to city, state, and nation,

as an expert in this important branch of chemistry, is difficult to overestimate. They include helpful and constructive activities in manifold directions, and resulted in deservedly won recognition from the U. S. Department of Agriculture, the U. S. Food Administration, the American Public Health Association, the Carnegie Institution, the National Research Council, and a host of others, all of which will be found set forth in the publications to which I have already alluded. Recently he was elected to the National Academy of Sciences, another signal honor highly and justly prized by all scientists.

Students have flocked to him from other lands as well as from our own; and it would be difficult to find any first-class university or college in the United States, where the chemistry of food and nutrition is taught, where his influence, either as teacher or author, is not a most potent one.

Having been in the teaching game even longer myself, I know just how he feels toward this army of former students. Our students are always "our boys" or "our girls," no matter how old we grow or what seas divide us, and this is one of the happiest recompenses and rewards of the teacher. Alexander the Great is reported to have said of his famous mentor Aristotle, "I honor Aristotle no less than my own father; for, if to my father I owe life itself, to Aristotle I owe that which makes life most worth living." And Emerson, in his Essays, says, "There is no teaching until the pupil is brought into the same state or principle in which you are; a transfusion takes place; he is you, and you are he; *there* is a teaching; and by no unfriendly chance or bad company can he ever quite lose the benefit."

AS A TEACHER, Sherman is a convincing and lucid expositor, an obvious master of his subject, his statements being often based upon the results of his own investigations or of those in which he has participated. Level-headed and not influenced by transient fads and fancies, he pursues the even tenor of his way in the search for truth by observation, experiment, critical and well considered interpretation. There is nothing strange about his students' attitude of respectful admiration, esteem, and unswerving loyalty. It is the natural and merited tribute of the pupil to the personality and achievements of the master, and a realization of the existence of that spirit of sympathy and mutual understanding which has its roots in common aims, ideals, and ambitions, its steady growth in the similarity of the tasks and problems faced, and its fruition in lifelong and devoted friendship.

It was to be expected that as an author his writings would be found to exhibit the same admirable traits that are so much in evidence in his

work as a teacher. His books are characterized by a thorough knowledge of the subject, a logical classification of the contents, a clear, forceful, and effective consideration of the facts and theories presented, a judicious discrimination between the more and the less essential in the selection of the material, a generous recognition of credit where credit is due, and an approach to controversial topics with an open mind free from prejudice or bias. He goes to no end of pains to check up and verify all statements before they are admitted to his books, in order that these books may be as dependable and authoritative as possible. I know, because he occasionally drifts into my office to discuss some statement in the domain of organic chemistry the accuracy of which he doubts.

IT HAS always been the greatest pleasure to work with him as a colleague and as an executive officer, for he has excellent judgment, sound common sense, can see and appreciate the other man's point of view, is patient and good-tempered in debate, and direct and forceful in argument, choosing his words with care and deliberation, and keeping clearly in mind the point at issue. I have never known him to insist upon his own opinion or judgment contrary to the expressed wishes of the other members of the staff, or without consulting those affected. In fact, his tendency in such matters has been generally to stand up so straight as to lean over backward and defer to the staff even when their opinion is directly opposed to his own. These are some of the reasons why, in the fourteen years that he has served as executive officer of our department of chemistry, our staff meetings have been so harmonious and so free from family squabbles or any really serious differences of opinion. I am confident that, to a man, our staff would regard it as a calamity were anything to happen which would make it impossible for him to continue at his present post. We have been worried on this score occasionally, once when a movement was on foot to get him to go to the U. S. Department of Agriculture, and again two years ago when he had to rest for a while to recover his strength.

He is a most conscientious and indefatigable worker, who never spares himself, and whose physical body is scarcely equal to the driving spirit it contains. It is the earnest wish and hope of all his colleagues, as I am sure it is of all chemists everywhere, that he will so conserve his health and strength as to enable him to continue for many years to come the direction of the destinies of the Columbia University department of chemistry and to carry on those vitally important investigations which have already won for him such enduring international fame and such very exceptional honors as the medal of this Institute.

Speech of Presentation*

By Henry G. Knight

History of the medal. The importance of Dr. Sherman's researches on food and nutrition. His work as a teacher and writer.

WE ARE assembled today on the occasion of the annual meeting of the American Institute of Chemists to honor a man—a scientist, a chemist—"for noteworthy and outstanding service to the science of chemistry and the profession of chemist in America."

Since its establishment in 1925, the medal of the American Institute of chemists has been awarded as follows:

1926: to Dr. William Blum of the Bureau of Standards, for his noteworthy and outstanding researches in electrochemistry.

1927: to Dr. Lafayette B. Mendel of Yale University, teacher and investigator in the physiological chemistry of digestion and nutrition; protein metabolism; physiology of growth; vitamins and accessory food factors.

1929: jointly to Mr. and Mrs. Francis P. Garvan for their outstanding service to the science of chemistry. Their munificent benefactions in the cause of chemical education, and for the purpose of acquainting the public with the significance and value of chemistry, have had far-reaching consequences.

1930: to Mr. George Eastman. He will long be remembered for his liberality to such institutions as the Massachusetts Institute of Technology and his active interest in the promotion of research, especially in the field of organic chemistry.

1931: to Mr. Andrew W. Mellon and Mr. Richard B. Mellon. What

* Delivered at a luncheon of The American Institute of Chemists, The Chemists' Club, New York, N. Y., May 20, 1933.

they have contributed toward the advancement of chemistry in its broadest aspects has characterized them as leaders in the development of American chemical industry. As the founders of Mellon Institute of Industrial Research they have established a great organization, wherein a body of trained scientific investigators have contributed steadily and magnificently to the consolidating of America's position in the scientific and technical world.

Last year, the medal was awarded to Dr. Charles H. Herty, a great teacher, publicist, and productive investigator. Rarely are the three combined in one man. In this group to whom he is so well known, I need say no more than that the presentation of the medal to Dr. Herty received the heartfelt approval of all who are acquainted with him and with his work in the interests of chemistry and chemists.

Of the eight medalists of The American Institute of Chemists, then, three are chemists, teaching or engaged in research in the science of chemistry. The other five, although they were not chemists at all, have certainly given noteworthy and outstanding service to both the science of chemistry and the profession of chemist in America; and we feel—and I think you will agree—that the man whom we are to honor today also stands convicted on both counts.

DR. HENRY CLAPP SHERMAN has an unusual gift of expressing important scientific facts in a clear-cut, understandable manner, which has made his work as a teacher and writer of great influence throughout the world. His researches, most of which were in partnership with his students, have resulted in the publication of about two hundred scientific papers and four books: truly a phenomenal contribution. They cover a very wide field: analytical chemistry, written early in his career while he was teaching this subject; the chemical nature of enzymes; the calcium, phosphorus, and iron requirements in human nutrition; quantitative methods to determine the vitamin values in foods and the nutritional significance of vitamins A, B, C, D, and G.

From his studies, Dr. Sherman has deduced chemical principles for solving many of the problems of food economics. By studies involving the whole life cycle of laboratory animals, and by the application of the newly discovered facts and principles in the chemistry of nutrition, he has made it possible to advance the standards of health and life expectancy of the animal. These same principles applied to the problems of human nutrition have become a positive contribution to longevity, which was previously correlated only with hereditary factors.

While it might be possible to place a value in dollars and cents on the work of Dr. Sherman, even a low estimate of it would be staggering. The real value of this work, however, is measured by the better health, longer lives, and happiness of humanity, which is beyond price; and in the vital influence of his teaching, which is beyond measure. Just as the circles widen from the dropping of a stone in water, and from the sounding of a bell, just so does the powerful personality of this man's classroom and laboratory instruction radiate far and wide. Long after he has laid aside the pleasurable duties of his teaching, his spirit will live, not only in the present generation of his students but also in those whom they have taught and will teach.

Dr. Sherman—upon behalf of The American Institute of Chemists, in recognition of your unselfish service to the profession of chemist in America and to the science of chemistry which has no national limits, I have the honor to present you with this medal. It carries with it in full measure the appreciation, respect, admiration, and affection of American chemists for you not only because of your achievements but also for yourself, as a man. The world has been made more than a little better because you have lived, and in recognition of this fact a path has been made to your door.

Speech of Acceptance*

By H. C. Sherman

Acknowledgments. Some trends in the science and profession of chemistry.

I DO NOT find the words in which at all adequately to express my great appreciation of this honor, all the more prized because it comes from an organization devoted to the ethics and ideals of our profession, and through the hands of such highly esteemed colleagues.

Already a debtor to my profession, I must ask that it be understood that this further indebtedness is incurred in a representative capacity! The services in food research and to chemical education, cited by the Institute in explanation of this award, have been largely group projects made possible by the institutions with which, and the collaborators with whom, it has been my privilege to work. The many who have contributed by work of head and hand and by moral and material support will, I trust, share the honor and the indebtedness of this award.

Potent, too, has been the spirit of some whose names are no longer on any active roll. Among those to whom we largely owe the impetus of our food research: Henry E. Alvord, who saw science whole in its relation to human progress and who demonstrated good administration of research in a difficult and formative period; Samuel W. Johnson, teacher and inspirer of a generation of investigators who brought chemistry into the service of food production and the understanding of foods; and his student, W. O. Atwater, pioneer of the modern era of human nutrition, whose assistant I had the privilege to be. Among those who have shaped the Columbia tradition in chemical education the names of Mitchill, of Chandler, and of Alexander Smith rise to mind more quickly than they can be spoken. And to my former immediate chief, Edmund H. Miller, generous alike in sharing with me what he had derived from the past, and in permitting me to make a future in new paths, am I particularly indebted for the privilege of enjoying both a responsible share in the training of chemists at Columbia and an opportunity to develop the line of research which especially appealed to me.

I am confident that universal affection for Dr. Chandler and esteem

* Delivered at a luncheon of The American Institute of Chemists, The Chemists' Club, New York, N. Y., May 20, 1933.

for his services in making chemistry known to the world of affairs in America and establishing the profession of chemist in the consciousness of our country had much to do with turning the thoughts of the committee of award toward the department which was so long his.

But, in this meeting of busy men, acknowledgment must not be allowed to run into reminiscence. The order of the day is to face forward; and the officers of the Institute have asked that I speak on some trends in the science and profession of chemistry.

IN CHEMISTRY, to a greater extent than elsewhere, *the profession* is understood to include both those who practice in the world of affairs and those whose researches in pure science supply the underlying theory. In this respect the science and the profession of chemistry are one.

But this very fact involves a need for discrimination from certain points of view. For instance, we meet the question, "Is chemistry oversold?" From the point of view of technological employment predicated upon immediate cash returns, possibly yes; from the point of view of what chemistry can do for our civilization, certainly no.

What chemistry can do for human welfare is only barely beginning to be appreciated. President Knight has recently pointed out that on the one hand there is research which produces something new to sell; on the other hand research that increases our understanding and teaches us the wiser use of what we have.

We live in a dynamic and kinetic world, a world of change—and the very science of change is chemistry.

We live in an age of science—and among the sciences chemistry occupies the central place. It partakes of the nature both of the mathematical sciences on the one hand, and the natural sciences on the other. Also, however, it has characteristics which are unique.

If without any predetermined vocational motive, chemistry were as extensively taught and as seriously studied as would correspond with its inherent importance for the understanding of the world in which we live, the science of chemistry would flourish as never before and without necessarily overcrowding the profession.

Let chemistry as a science, then, be increasingly emphasized as a part of twentieth-century education; and, as past-president Crossley has wisely suggested, let only the very best of those who study chemistry as a science be encouraged to pursue it as a profession.

Appreciation of what chemistry can contribute to the understanding and improvement of life, apart from immediately commercial considerations, will lead to a demand for the employment of more chemists upon

what Dr. Knight has called "use-research" in governmental and endowed laboratories, as well as in connection with the teaching of chemistry.

IF WE ARE to hope for the maintenance, by the public and perhaps also by industry, of considerable numbers of research positions which do not contribute directly to money income, the question must frankly be faced in each case, "How soon may tangible results be expected?" To reply merely that research cannot be hurried is not conducive to the establishment and maintenance of research positions, but tends rather to confirm the impression which already prevails in some quarters that a research appointment is a license to be lazy. It is important to our science and profession to correct any such impression in the mind of either the employer or the research worker himself.

If we compare research projects with engineering undertakings, some are like those mechanical engineering jobs which in their nature must be completed before they can begin to be of benefit; while others are comparable to the development of a mine in which so long as good ore continues to be found the owner profits more the longer the work continues.

But the claim that one is working a mine must cease to be convincing if one never brings anything tangible out into the light of day. Even a gold mine which is expected to last a lifetime is also expected to yield annual dividends, and in these days of closely studied annual budgets, even the researches of most far-reaching significance should be so planned and conducted that each year's work will show some intelligible advance. To resist the natural administrative demand for an intelligible accounting showing tangible progress each year is to hamper the development of our science and profession by discouraging the support of farsighted research.

Research which depends upon administration for its support cannot be wholly a law unto itself. In training research workers we do well to remind them of the wise saying that "originality consists in thinking for oneself, not in thinking differently from other people"—particularly when one looks to other people to provide the wherewithal for his research.

APPARENTLY we are only at the beginning of what chemistry can do for health, and thus for happiness, and for the dignity of human life.

Beside adding to the physician's armamentarium by the synthesis of drugs and antiseptics, chemistry is working effectively for positive health through nutrition.

Not only does the chemistry of nutrition, like bacteriology and medi-

cine, lower the death-rates at early ages, but it also is rendering a unique service in materially improving the life-expectation of the adult. As demonstrated upon laboratory animals, selected for such likeness to man in the chemistry of their nutrition that the findings are undoubtedly fully applicable in principle to the human problem, simple readjustments of the quantitative proportions in which staple articles of food are consumed may induce a longer lease of healthier life through an enrichment of the dietary in certain of its chemical factors. In fact the prime of life has thus been extended in both directions, development being expedited and old age deferred in the same individual by the same improvement in a diet which was already adequate according to current standards. This may reasonably be described as a chemical improvement in the quality of the life process throughout.

Just what chemical elements and compounds can thus contribute to improvement in the average length and quality of ordinary adult life, and what degrees of further improvement may be expected from the fuller development of such research, are problems, certainly of great importance to human welfare, which remain to be worked out as rapidly as means can be provided.

This example is presumably more or less typical of the studies waiting to be made upon considerable numbers of commodities.

Chemists engaged in such types of research do not compete with those engaged in directly commercial work. The outcome of their researches may, however, influence the development of industry in the long run through the enlightenment of consumer demand.

Hence not only endowed laboratories and those supported by taxation to work directly for the public welfare, but also the more farsighted of industrial organizations, may be expected increasingly to interest themselves in research of such types in proportion as we grow in appreciation of the significance of chemistry for the understanding of life and to guide our use of the things our world offers.

Thus chemistry, as science and profession, offers its contributions even-handedly—at once for the illumination of man's intellectual, and for the amelioration of his material, world.

THE ANNUAL MEETING

THE eleventh annual meeting of The American Institute of Chemists was held at The Chemists' Club, New York, N. Y., on May 20, 1933, at three P. M., with President Henry G. Knight presiding.

Reports of the Secretary, Treasurer, and auditors were received, and the reports of the following committees: Professional Education, M. L. Crossley; Legislation, Lloyd Van Doren; Membership, D. D. Jackson; Group Insurance, M. L. Crossley.

The Secretary was instructed to write to Dr. Jackson and thank him for organizing the membership committee so efficiently. The thanks of the Institute were also extended to Dr. Crossley for his fine work with the committee on group insurance.

The report of the representative to the Committee for the Relief of Unemployment among Chemists and Chemical Engineers was read by M. R. Bhagwat, in the absence of Frank G. Breyer.

The following additional reports were presented:

THE CHEMIST, Edward L. Gordy; advertising department, D. H. Jackson; New York Chapter, D. D. Jackson; Pennsylvania Chapter, Howard Stoertz; Niagara Chapter; Washington Chapter.

The tellers reported that the following Fellows had been elected to the national council: Frank G. Breyer, Herbert R. Moody, Florence E. Wall.

Upon motion made and seconded, the constitution was amended by adding the following sentence to Article II, Section 8: "Those who received their academic training prior to 1926 may substitute two years of professional experience for the two years of graduate study."

The following resolutions were adopted:

Resolved: That The American Institute of Chemists, Inc., expresses its great appreciation of the hearty cooperation and invaluable assistance given The American Institute of Chemists, Inc., by The Chemical Foundation, Inc.

Resolved: That The American Institute of Chemists, Inc., expresses its appreciation to D. H. Jackson and Edward L. Gordy for their generous and valuable work for THE CHEMIST.

Whereas divine decree has taken from us our loyal member and cherished friend, LeRoy Seidell, and

Whereas The American Institute of Chemists, Inc., owes to him a debt of gratitude for his helpfulness and foresight in its organization and for his gratuitous and faithful service as its Secretary.

Therefore be it *Resolved:* That we, his fellow-members at this annual meeting of The American Institute of Chemists, Inc., bear testimony to our obligations to him as a member and officer, and

Be it further *Resolved:* That these resolutions be spread upon the minutes, and that a copy of the same be sent to his family.

HOWARD S. NEIMAN, *Secretary*

Report of the Secretary

THE season of 1932–1933 has been a most successful one, notwithstanding the general business conditions, the unfortunate economic conditions of chemists, and the financial condition of the Institute.

During the season the council held eleven meetings with an average attendance of ten officers and councilors, the Pennsylvania and Washington chapters being represented at each meeting.

A chapter known as the Niagara Chapter, with 16 members, was formed, the territory of the chapter including the counties of Orleans, Genesee, Wyoming, Cattaraugus, Erie, and Niagara, of New York State.

Unfortunately The Chemical Foundation found it necessary to discontinue its financial assistance to the Institute, its action, however, not being based upon any loss of interest in the objectives of the Institute or of desire to be of every possible assistance to it.

This reduction in income necessitated a re-budgeting of THE CHEMIST, and compelled a reduction in the size of the publication and the elimination of a paid editor. Edward L. Gordy, the former editor, generously offered his services without remuneration in the editing and preparation of the future issues of THE CHEMIST during the season, and the last several numbers were published under these conditions.

The following actions were taken during the season:

ELECTIONS

Fellows	71	
Associates	21	
Juniors	7	
Student Members	2	
Total		101
		178

LOSS OF MEMBERSHIP

Dropped: Fellows	1	
Resignations: Fellows	11	
Deceased: Fellows	3	
Total	15	
Reinstated: Fellows	1	
Total		14
Increase in membership		87
Associates raised to Fellows	2	
Junior raised to Associate	1	
Dues waived	18	

William H. Walker was elected an Honorary Member.

PRESENT MEMBERSHIP

Honorary members	7
Life members	2
Fellows	566
Associates	85
Juniors	71
Student members	2
Total	733
Membership May 1, 1933	733
Membership May 1, 1932	646
Increase	87

We elected 52 members during 1931–1932, and 101 members during 1932–1933, an increase in membership of 14% during the past season.

In view of the present economic conditions, and the experience of other similar organizations, this increase in membership would seem to be evidence of a growing appreciation among American chemists of the importance of the Institute in their professional and economic lives.

The most serious subject that confronts us is the future of THE CHEMIST, without which the very existence of the Institute would be threatened; and means should be devised for its future continuance.

Appreciating the unfavorable conditions which have existed during the past year, the officers and councilors have expended their utmost endeavors in behalf of the Institute; and the assistance they have received from many of the members has enabled them to retain the Institute in its enviable position notwithstanding the difficulties and obstacles that have confronted it.

The Council is merely a governing body, and the results of its administration are largely dependent upon the support and assistance it receives from the members, every one of whom should consider himself, or herself, a self-appointed aide, making such suggestions and giving such support as will enable the Institute to further its influence for the professional and economic advancement of American chemists.

Respectfully submitted,

HOWARD S. NEIMAN, *Secretary*

THE CHEMIST

THE two issues of THE CHEMIST immediately after the last annual meeting contained 96 pages. In July the Institute's grant from The Chemical Foundation was reduced, along with the Foundation's other activities. The August CHEMIST was therefore omitted, and the September issue was made the roster. THE CHEMIST was cut to 80 pages, and later to 40, the present size. Certain other printing economies were effected. The cover was changed to a glossy stock which permits advertisers to use half-tones.

A three-year plan for making THE CHEMIST and the Institute gradually self-supporting was prepared by Dr. Knight, Dr. Morgan, and the editor; but the unexpectedly large reductions in the income of The Chemical Foundation prevented the definite adoption of the plan. During the two or three months that this "three-year plan" was tried, however, the results in every department (new subscriptions, new advertisers, new members for the Institute) exceeded the estimates prepared. The campaign of letter-writing to secure new members paid for itself out of the first half-year's dues of the new members thus secured—and brought in a high type of member.

In regard to advertising, I cannot speak too highly of the work of Mr. D. H. Jackson, advertising manager of THE CHEMIST. Working chiefly during the economically unfavorable months of December, 1932, and January, 1933, he increased the advertising from an average net income of $52.97 per month to $106.60 per month—more than double.

At present the entire cost of printing THE CHEMIST can be paid by a further increase of $3\frac{1}{2}$ pages of advertising per month. The members of the Institute are earnestly solicited not only to encourage their own companies to advertise in THE CHEMIST, but to exert their influence as purchasers of chemicals. If companies feel that customers are interested in the future of THE CHEMIST, selling the space is comparatively easy.

The printing bills of THE CHEMIST could also be paid by increasing the subscriptions to 1500. With a magazine of the present size, non-members of the Institute are hardly likely to be interested. Since the reduction to 40 pages, no effort has been made to obtain outside subscribers.

EDITORIALLY, the 40-page size presents some advantages. It was impossible to publish a 96-page magazine without using some material that was filler. The present magazine has fallen heir to some of this material, already set up; and in the existing financial stringency these articles must be used.

Articles which seem particularly appropriate to THE CHEMIST, and of which we should like to have more, are:

1. The articles on licensing.
2. D. H. Killeffer's employment article.
3. Economic discussions, like W. J. Baëza's.
4. The symposium conducted by the Niagara Chapter.
5. The portion of the Bigelow-Sanford article which discussed chemistry's proper approach to industry.
6. Occasional short, light philosophical articles: Doctor Ingersoll's "Experience vs. Experience," and LaWall and Harrisson's "There is Nothing New under the Sun."
7. Surveys of professional fields, especially when they are as specific as the article on "Prospects in Paper," by R. H. Stevens. "Prospects in the Non-ferrous Field," by H. F. Bradley, was reprinted in CHEMICAL MARKETS.

We are especially glad to publish comments on any of the controversial professional articles which have appeared.

I should like to thank publicly the still disguised Autocratic Chemist.

IT WILL assist the editor of THE CHEMIST and advance the cause of the Institute if the secretaries and program chairmen of the various chapters will obtain advance copies of any speeches which are likely to have news interest, and will send them to the editor so that a release for the daily papers and technical press can be prepared. Where the address is extemporaneous, an advance paragraph or two of newsworthy material will help. The important speech made before the Pennsylvania chapter by Mr. Williams Haynes, editor of CHEMICAL MARKETS, lost much of its value because it could not be obtained beforehand. Dr. Theodore Zucker's address before the New York chapter was on the less unique subject of vitamins—but a few days after the meeting,

forty-eight long newspaper clippings had already come into the office of the publicity agent who handled the release.

For the present, it seems that the Institute can easily say all it has to say in a 40-page CHEMIST, and that expansion in size can well await increases in advertising. Before any expansion in text, it might also be well to consider the possibility of paying authors of articles for their contributions.

It would seem wise to have any future subsidy to the Institute arranged, if possible, on terms which permit part of the money to be used for increasing the membership. The past year's experience has shown that such expenditure brings results—and it seems the quickest way to increase the usefulness of THE CHEMIST.

Respectfully submitted,
EDWARD L. GORDY, *Editor*

Advertising Department

THE campaign for new advertising contracts, carried on by the writer during the past six months under the direction of Mr. Neiman and Mr. Gordy, has consisted largely of the following activities:

1. Substantially enlarging the list of firms who are prospective advertisers and obtaining the names of the individuals who have authority or influence in the actual decisions for new advertising contracts. This list now numbers approximately two hundred and is being increased from time to time.

2. Three circular letters have been sent to the entire prospect list emphasizing the advertising advantages of THE CHEMIST; also a number of special individual letters to many of the more important prospects.

3. Literature on laboratory chemicals and apparatus was obtained from more than one hundred laboratory supply houses and manufacturers. This literature was abstracted and incorporated in a questionnaire and sent to the entire membership of the Institute with the suggestion that each member check the literature which interested him. About 200 questionnaires were returned to us. The results were classified and tabulated and the names referred back to the firms who furnished the literature so that they could mail it directly to the members. In this way inquiries for literature for individual firms ran as high as seventy-five and eighty, the average being about sixteen. The prospective advertisers appreciated this service as was indicated by letters and comments from nearly all who received inquiries due to our efforts.

4. Personal calls have been made by the writer on about forty prospective advertisers in the New York metropolitan area, with repeat

calls on those who seemed interested. These personal calls have proved to be by far the most effective means of getting new advertising. Unfortunately they require a great amount of time and perseverance, as it is frequently difficult to get to the executive who has the authority to place advertising contracts. The circular letters and service outlined above have proved to be a big help in getting interviews with the proper executives.

The results of the campaign outlined above have been definitely noticeable, and while they are disappointing to the writer they are far from discouraging. The paid advertising carried in THE CHEMIST in 1932 and 1931 consisted of three contracts for a total of $2^1/_2$ pages. Since the new campaign started in November, 1932, the following new paid advertising has been arranged:

Fred S. Carver	1 page (single insertion).
Hoke, Inc.	6 half-page insertions for 1 year.
General Chemical Co.	6 full pages for 1 year.
Palo-Myers	12 half-pages for 1 year.
R. P. Cargille	1 page (single insertion).
Burrell Technical Supply	1 page (single insertion).

In addition to the above tangible results of the campaign we have made progress toward new advertising contracts from other new firms. Some of the more likely prospects are mentioned here so that members of the Institute can put in a good word at every opportunity. Those of our members who actually buy, recommend, or specify laboratory supplies can accomplish a great deal by recommending THE CHEMIST as an advertising medium to the proper parties. A word of recommendation to a laboratory supply house from a customer or a prospect, means more than anything that can be said by an advertising salesman. Some of the firms to whom such recommendations should be made by our members are as follows:

N. J. Laboratory Supply Company, Newark, N. J.
H. Reeve Angel Company, New York, N. Y.
Schleicher and Schull Company, New York, N. Y.
Pfaltz and Bauer, Inc., New York, N. Y.
Darco Sales Company, New York, N. Y.
Alberene Stone Company, New York, N. Y.
Laboratory Furniture Company, Long Island City, N. Y.
Christian Becker, Inc., New York, N. Y.
Barnstead Still & Sterilizer Co., Boston, Mass.
Eastman Kodak Company, Rochester, N. Y.
Fisher Scientific Company, Pittsburgh, Pa.
Jena Glass Works, New York, N. Y.

Leeds and Northrup, Philadelphia, Pa.
Furfural Divisions, Quaker Oats Company, Chicago, Ill.
Precision Scientific Company, Chicago, Ill.
Thermal Syndicate, Ltd., Brooklyn, N. Y.
Thiokol Corporation, Yardville, N. J.
Arthur H. Thomas Company, Philadelphia, Pa.
U. S. Colloid Mill Corporation, Long Island City, N. Y.
Will Corporation, Rochester, N. Y.
Carl Zeiss, Inc., New York, N. Y.
Bausch and Lomb Optical Company, Rochester, N. Y.
Merck & Company, Rahway, N. J.

Some of the above firms have already promised to advertise in our publication; but the cooperation of our members will help a great deal in getting them started. The present advertising revenue of THE CHEMIST is only a small fraction of what it should be. However, a fair start has been made in the past six months and the prospects look good for the near future.

Respectfully submitted,
D. H. JACKSON, *Advertising Manager*

Committee on Unemployment

THE American Institute of Chemists gave sponsorship to the Committee on Unemployment and Relief for Chemists and Chemical Engineers, which was organized to help the unemployed in the profession in the greater New York metropolitan area, in December, 1931. Since then, this committee has frequently presented its activities to the members of the Institute at their various meetings and through the columns of THE CHEMIST.

A mass meeting on March 4, 1932, was led by George C. Lewis, Charles H. Herty, and D. D. Jackson. The stirring appeal to the chemical profession by these leaders and its sympathetic response gave a decided impetus to the volunteer workers of the committee to secure office space at 300 Madison Avenue, New York City, and to decide on a program of assisting the unemployed either by positions, or by "made work," through the assistance of various city organizations and also by using the funds to be collected by the committee itself.

The committee has registered 914 qualified chemists and chemical engineers. Records of these individuals have been thoroughly classified as regards their needs and experience, as given on their registration cards. To date 120 have been placed in permanent positions and 173 are working temporarily in chemical or non-chemical jobs, or are

being helped by the "made-work" program of this and other committees, such as the Gibson Committee, Home Relief Bureau, etc.

The number of placements naturally varies from time to time. At one time, through the assistance of the Gibson Committee, about 100 individuals were helped—now, about 30 are receiving such help. The committee at present is giving direct assistance to 17 persons. Of these, 8 are at present engaged in various universities in carrying out fundamental research under the able guidance of Professors Gettler and King at New York University; Professors Bogert, Fink, Work, and LaMer at Columbia University; Dr. Brand at the Medical Center; and Dr. Brown at Rutgers University. The remainder are giving useful services to the community by working in public libraries and at the committee's office. In addition to the above indicated assistance, the committee supplies food, shelter, clothing, etc., for cases desperately in need of such help.

The volunteer workers have maintained the committee's offices, always open to the registrants, as a form of club room. This cordial reception and sympathetic response to the plight of the unemployed have helped to save the morale of hundreds of college graduates and post-graduates.

The committee thus far has sent four letters of appeal for funds to the individuals in the profession, numbering about 4500. Of these, 818 have made at least one contribution; but 451 have borne the major burden. The American Institute of Chemists contributed $200.00 in April, 1932. The committee has collected a total of $19,778.19 to date.

With continued unemployment and increasing need, the committee is thinking of sending another letter of appeal for funds and is now engaged in formulating a program for its activities during the next year.

The committee needs direct support, not only from the sponsoring societies, but from the individuals in the profession. It is to be hoped that in the near future these technical societies will concentrate their efforts and with combined action evolve effective methods, not only to eliminate unemployment from the profession, but so to unify the individuals in it that they will make the industry realize the value of their service, to the betterment of the chemical industry.

Respectfully submitted,

FRANK G. BREYER, *Chairman*
M. R. BHAGWAT, *Secretary*

New York Chapter

SIX regular meetings of the New York Chapter were held, as follows:

November—Colin G. Fink: "The Electrochemist in Art and Archeology."

December—Joint meeting. Theodore F. Zucker: "Vitamin Research and Public Health."

January—Stroud Jordan: "The Chemist in Confectionery Manufacturing."

March—Ruel C. Stratton: "The Field of the Chemist in Accident and Occupational Disease Prevention."

April—Lawrence W. Bass: "The Chemist in the Dairy Industries."

The chairman of the entertainment committee, Jerome Alexander, is to be especially complimented on arranging these meetings. They have been unusually well attended, and have been ended with much enthusiastic discussion.

In spite of the depression the increase in the membership of the chapter has been sixty-two, not counting the reduction of sixteen New York Chapter members transferred to the Niagara Chapter. Of the sixty-two members gained, forty-four are Fellows, thirteen Associates, three Juniors, and two Student Members. There were only four resignations, and one member dropped for the non-payment of dues.

The present membership of the chapter is 321 Fellows, 101 Associates, 15 Juniors, and 5 Student Members, a total of 422.

The various committees have functioned very well, and the chapter has had a decidedly successful year.

D. D. JACKSON, *Chairman*

Washington Chapter

AT THE first meeting of the present fiscal year, held September 23, 1932, a round table discussion was held on the question, "What can the Washington Chapter do to further the aims of The Institute of Chemists?" The following topics were considered in the discussion: (1) new members, (2) qualifications for membership, (3) articles for THE CHEMIST, (4) increasing the prestige of the Institute, (5) enforcement of the code of ethics, (6) statistical survey of the profession of chemist.

It was concluded that the Institute should make it clear to prospective members that chemists of real ability and sufficient experience are eligible as fellows even though they had not attended college six

years. The members related their experiences in soliciting new members under topic (2) for the benefit of others trying to get members. Under the third topic the chairman explained the type of article most desired by the editor of THE CHEMIST and urged such members as were able to write such articles. Under the next topic it was suggested that the chapter give a junior membership in the Institute for one year to the graduates of each of the universities in our territory majoring in chemistry, who have the highest scholastic standing. A committee was appointed to work out the details of such a plan. The next topic discussed brought out the fact that we have an excellent code of ethics but that very little has been done to make it effective. It was suggested that if any one knew of a case of flagrant violation of our code that could be effectively prosecuted, he should report it to the National Council with a recommendation for action. A successful enforcement of our code in just one case, if given publicity, would help the Institute tremendously.

On November 4th, Watson Davis, editor of *Science Service*, spoke before the chapter on "Popularizing Chemistry." He called the attention of the chapter to a nation-wide campaign of business men to have much government research and scientific work discontinued. This campaign, if successful, would have serious consequences for many chemists as well as harmful effects upon the country as a whole. A committee was appointed to collect data on this situation and to take such steps as seemed advisable insofar as the welfare of members of The American Institute of Chemists was affected. This committee gathered copies of many publications containing statements belittling the scientific work of the government. Some of these statements were false and others were exaggerations.

It was apparent at once that if these statements went unchallenged, many chemists in government service would lose their positions. This would create a serious competitive situation for other chemists already injured by the depression. The Washington Chapter therefore undertook a campaign to correct these false statements and to create a more favorable atmosphere. The necessity for chemical research was pointed out to a number of nationally known radio speakers, news reporters, and magazine writers. Most of them were glad to receive the facts and figures furnished by this chapter as the basis for interesting stories, which received wide publicity. The truth of the statements made was easily proven and the logic of the arguments was compelling, so that no doubt it had some effect in the change that has since occurred in public opinion upon this point.

On January 13, 1933, Martin T. Fisher, prominent patent attorney, addressed the chapter on "Patents for Chemists."

The next meeting was held in Baltimore on February 17th. The members were shown through the plant of the Marland Glass Corporation in the afternoon. Later dinner was served in a down-town restaurant, which was followed by an address on "Chemical Industry in Baltimore" by N. W. Matthews.

The meeting held on May 12th was devoted entirely to business.

The Washington Chapter has been attempting to gather together a complete file of THE CHEMIST. Some of the early issues are still missing. If a complete set can be secured it is planned to have them bound and placed in a safe place.

The efforts of the members to secure new members have been very unsuccessful. This is not surprising, however, as few people working on a salary will make new commitments when their positions are seriously threatened. The present membership of the chapter is 56.

The funds of the chapter are entirely tied up in a closed bank. Such money as has been absolutely needed for printing, postage, etc., has been loaned by the officers.

The same officers were reelected for another year, as follows:

Chairman, A. L. Mehring; Vice-chairman, S. M. Weisberg; Secretary, C. E. Senseman; and Treasurer, J. W. McBurney.

Respectfully submitted,

A. L. MEHRING, *Chairman*

Pennsylvania Chapter

DURING the past year the following meetings of the chapter were held:

September—Frank G. Breyer of Singmaster & Breyer: "Unemployment of Technical Men—How to Meet It."

October—Arno Viehoever, Philadelphia College of Pharmacy: "Living Materia Medica."

November—Trip through the photo-engraving department of the Philadelphia *Public Ledger*.

December—Trip to the Philadelphia Electric Light Association. Talks by Messrs. Hoos and Brainerd: "Influences in Modern Illumination."

January—Symposium on experiences of chemists with patents. Introduced by H. C. Porter, and continued by patent attorneys Moulton and Rivise.

February—George Whitwell, vice-president of the Philadelphia Electric Company: "Experiences of a Chemist."

March—S. W. Ferris, Atlantic Refining Company: "Crystal Growth of Paraffin Waxes." Illustrated.

Williams Haynes, editor of *Chemical Markets:* "Chemicalization of Industry—a Threat and a Promise."

Max Trumper, consulting chemist and toxicologist: "Tendency to Over-specialization in Chemical Education."

During the year the Pennsylvania Chapter has stressed the importance of several considerations in strengthening organization:

1. Type of program that should be arranged.
2. Publicity for activities.
3. Planning for the year ahead so as to be ready for agressive action at the start of each new fiscal year.
4. Need of selection of well set up officer group who can function closely together in maintaining policies of Institute.

To this end a study of the past year indicates:

1. Programs differing essentially from the A.C.S. should be selected, dealing mostly with subjects of economic or cultural and professional or community interest.
2. Our activities must be clearly and actively brought to the notice of the public and of non-member chemists.
3. During each year plans must be made for the year ahead, especially for programs for the first three months.

OUTSIDE of the interesting programs set up by the program committee, the chapter definitely set itself to work on the problem of unemployment and relief.

In this we joined with the engineers at the Engineers' Club of Philadelphia as a part of the Technical Service Committee. Many engineers and chemists have been helped during the year.

One of our main objectives was to focus attention of the chemists of the Philadelphia area on this problem; and we may justly say that we agressively lead the way in this matter.

Another accomplishment pushed through by this chapter was the formation of a representative council of all groups of chemists and chemical engineers in this area to meet, discuss, and bring to attention of their groups questions requiring prompt action on the part of the profession as a whole. The main point in this is that we have obtained cooperation of the Institute of Chemical Engineers, the American Chemical Society, the Electrochemical Society, and the consulting group, and have made the chemists of this area more vocal.

Recommendations: For the best interest of the chemical profession in Pennsylvania it is very desirable that a chapter of the Institute be formed in Pittsburgh; and we recommend such action.

We would recommend similar action for the South Jersey or Wilmington area. This could be accomplished by some of our members in these cities and near-by places calling a meeting for such purpose. The Pennsylvania chapter will be glad to assist in any way possible.

EUGENE F. CAYO, *Chairman*
BENJAMIN LEVITT, *Secretary*

Niagara Chapter

THIS is hardly an annual report, for the reason that the newly organized chapter held its first meeting last November. At that meeting it was the expressed wish of the members in this area that efforts be launched to organize a chapter and adopt a constitution. Opinion was also expressed that four regular meetings be held each year—and it was proposed that the programs for these meetings be of a high order so as to attract able chemists in this area. Accordingly, meetings were held as follows:

November—Organization meeting.
February—Symposium on the relation of chemists to industry. Various phases of this topic were discussed by seven speakers.
May—Relation of the chemist to a research organization.

Each of these meetings was held in the evening, preceded by a dinner. A few qualified guests were invited to each meeting.

There are now 16 members in this chapter. No active membership campaign has been started, as it was the opinion of most members that to make progress slowly was a safe motto. It was considered a good policy to start out by bringing in the leaders among chemists as members of the Institute. When this has been done, there will be little difficulty in securing other qualified chemists.

Respectfully submitted,
WILLIAM J. COTTON, *Chairman*
HOWARD W. POST, *Secretary*
JOHN F. WILLIAMS, *Chapter Representative*

Industrial Research

A symposium held at the third regular meeting of the Niagara Chapter, A.I.C., May 23, 1933, Niagara Falls, New York.

FOLLOWING the precedent so successfully begun at its meeting last February, the Niagara Chapter recently devoted a meeting to the consideration of problems that occur in the carrying out of industrial research. These problems have to do not only with chemical reactions but with mechanical and personal aspects.

In opening the meeting Chairman William J. Cotton outlined the aims and scope of the symposium and then called upon the various members of the chapter for their contributions.

Robert L. Perkins: "The Research Problem and Program."

A research program and the research problem itself must justify themselves by their results; and in industrial laboratories these results must naturally be expressed in terms of dollars and cents. Industrial experimental work can be classified under three headings:

1. Research: *i. e.*, pioneering in new fields, searching for new processes.
2. Development, or work leading toward the discovery of optimum conditions for a given reaction which shapes the processes.
3. Correction of trouble. This branch has little real connection with the program itself, and is perhaps to be kept at a minimum by excellence in the first and second groups.

The proper balance between research and development depends on the circumstances and the times, as well as occasionally on the personnel. The need for men with the natural ingenuity for research will be greater in years to come, since we are now emerging from the period of war and post-war stimulation of development activities.

Discussion followed Mr. Perkins' talk and the question was raised as to whether it was advisable to let the research man follow up the problem through the development stage. One member present stated that his organization now has a fixed policy providing for the complete divorcement of all research men from development activities, except under unusual circumstances. The research man is nevertheless expected to act as consultant to the development chemist. Subsidiary problems

coming up during the course of development can usually be referred to the development chemist or, in simpler instances, to some technician.

Maurice L. Taylor: "The Research Man."

In the first place, the organization should foster the growth and development of its men. The research man is essentially cast in no very different mold than are many others. He must be honest, intelligent, and industrious; and he and his employer should work together for the common good. In addition, however, a research group functions to produce something new, and men should be selected whose qualities can be developed to bring out the ability to create this something new. For this inventive power there are necessary: the imagination to conceive new ideas and new entities; the knowledge and constructiveness to see it through; and the courage, perseverance, and patience to stick it out to the end. The first and third points represent characteristics generally inborn.

Other matters to which the prospective employer may pay attention are the chemist's ability to observe keenly, and his honesty—not the ordinary kind but the meticulous honesty that is with him all hours of the day. He should have a certain amount of adaptiveness without losing his own slant on life. Has he learned during his college career to be a student instead of a reader? Discussion followed as to whether or not an age limit should exist. The consensus seemed to be that in research there was less excuse for such an age limit than in almost any other activity.

Howard W. Post: "The Training of a Research Chemist."

Not long ago a well-known educator was lamenting the poor material sent to the average freshman class by the average secondary school. When he mentioned the matter to a high school principal, he was told that the trouble lay with the grade schools. Doubtless the latter would blame the kindergartens; and if all these statements are true, the proper place to begin the training of a research chemist is at home before he begins his formal education at all.

In college it is sometimes found that individual members of the faculty have hobbies which the student feels compelled to ride as strenuously as does the faculty member. In a larger sense, however, there should be no objection to this. The purpose of intensive study in some one field is not solely to amass knowledge about that one field, but is also to teach the student to think deeply and logically. A classical education is vital during the undergraduate days, but the

graduate student should be taught the peculiar habits of thought which make research possible. This does not mean that he should not have the ability to learn. Only by amassing a certain amount of information can these peculiar habits of thought be nourished. He must have as well the ability to enter the laboratory and handle his materials efficiently. He must recognize results when he has them and must be able to interpret them. And finally, he must have the same type of honesty that the previous speaker mentioned—the meticulous honesty.

As to the difficulties occasionally met, there might be mentioned first the apparent inability of some graduate students to organize their work and budget their time. Some students coming from institutions at which they have not been pushed very hard are utterly at a loss to organize the work they are suddenly called upon to see through. It is sometimes found also that boys suddenly removed from home ties and home influences need a semester to acclimate themselves to the individualism of the graduate school.

Paul J. Carlisle interposed at this point an interesting summary of what the industrial laboratory expects of the men turned over to it by the university:

1. A thorough grounding in the fundamentals of chemistry.
2. A reasonable working knowledge of related sciences.
3. A background of cultural subjects: *i. e.*, history, philosophy, economics, languages, etc.
4. A knowledge of the scientific methods of approach and pursuit of research problems.
5. The ability to express himself clearly both orally and in writing.
6. Intellectual honesty.

Arthur W. Burwell: "Research Failures—Their Correction and Elimination."

The proper place to eliminate research failures is before they go to work, but this of course necessitates careful selection. As the salaries rise, good research men become fewer and fewer, while the combination of research man and executive, the research director, is rare. Some failures are due to inattention to details. Sometimes the man's temperament keeps him from attending to these details, but that of course does not correct his errors. It is sometimes possible to save a man by giving him a junior position under careful supervision until he has built himself up to the proper level; some men lack genius, reasoning power, or some quality of like importance, and the man who continues

to make ill-considered decisions simply has to go. An employer cannot accept the academic record of an applicant as final without a personal interview and an opportunity to find out how he reacts to certain situations which he would come up against in the laboratory. After all these precautions a failure sometimes gets in and persists, and then the only thing to do is to fire him.

As to the research problem itself, the question was raised as to when, if ever, it dies, and when, if ever, it is to be considered worthless. The consensus was that a problem never dies. The subconscious brain of the research chemist mills it around from time to time; and sometimes a flash of inspiration comes to him, he tries out the idea in the laboratory, and the thing is solved.

Arthur J. Norton: "The Selling of a Research Problem to a Financial Management."

The business of tomorrow is based on the research of today, but the average financial man prefers to look at charts and curves which are the records of the past. It is up to the research man to sell his ideas; but he must first convince himself. He should understand as well as possible the point of view of the business man. He should cooperate with the accounting division to show them, if he can, that the laboratory should be credited with part of the sales. And he should devise ways and means to coordinate the laboratory with the sales and plant branches. Fundamentally, the best way to "sell" the laboratory is through reports. It is recommended that regular reports be required from the men. Finally, the results are the laboratories real *raison d'être;* and a careful balance of costs against results is the chemist's best argument.

Mr. Norton was questioned as to the best method of introducing a new product for which there is no demand. He replied that his organization has a sales department in the laboratory which cooperates with the outside sales department.

HOWARD W. POST, *Secretary*

BOOK REVIEW

Prescott and Johnson's Qualitative Analysis. Revised by McALPINE AND SOULE. *D. Van Nostrand.*

The revisers of this famous old text have done an excellent piece of work. Their point of view is that the subject of qualitative analysis is a continuation of the course in general inorganic chemistry, but with special intensive reference to the common acids and bases. Less than a quarter of the book, therefore, is devoted to theoretical principles; and of this quarter, a considerable portion is a sound and logical discussion of the principles of qualitative analysis as distinguished from the general principles of electrolytic dissociation. Also discussed are other branches of physical chemistry more or less relevant to the analytical problem.

The balance of the volume includes a scheme of qualitative analysis similar to the time-honored schemes familiar to every chemist. In addition, however, an attempt has been made to enumerate under each element or radical all of the properties of analytical value. This attempt represents an enormous amount of labor, since it includes reference to the newer organic reagents for many substances. And for this labor every owner of the book has reason to be grateful to Professors McAlpine and Soule.

In looking through the volume the reviewer noticed one error, namely, the statement on page 537 that lead perchlorate is not deliquescent.

The book is heartily recommended both as a text for colleges and as a life-long reference book.

KARL M. HERSTEIN

INSTITUTE NOTES

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National Council

The one hundred and second meeting of the national council was held at The Chemists' Club, New York, N. Y., at 11:30 A. M. on May 20th, with President Henry G. Knight presiding.

The following officers and councilors were present: Messrs. Arnstein, Breyer, Breithut, Jackson, Kenney, Morgan, Neiman, Sachs, Taggart, and Zons. Eugene F. Cayo, chairman of the Pennsylvania Chapter, and Edward L. Gordy, editor of THE CHEMIST, also attended the meeting.

The Treasurer's report was adopted.

The Secretary was requested to write to each member of the Board of Estimate and Apportionment relative to the dismissal of seven chemists from the Bureau of Engineers of the Borough of Queens.

Five new Fellows were elected.

Dr. Zons, of the auditing committee, reported that the books of the Treasurer had been examined by the committee and found to be correct.

HOWARD S. NEIMAN, *Secretary*

Pennsylvania Chapter

The speaker at the May meeting was Max Trumper, F.A.I.C., and his subject "The Hazards of Specialization." In the application of his science, the chemist has become more and more a specialist, until we have reached the point where we need abstracters of abstracts and reviewers of reviews. This high degree of specialization tends to keep the research worker from having a proper perspective of his own field; and progress slackens until perhaps new

impetus is given by the introduction of a fresh view-point from someone outside the particular field of specialization.

An illustration can be found in the realm of physiological chemistry, where the botanist has recently been of great aid to the chemist and has furnished him with toxicity-detectors more sensitive than guinea pigs or white rats. Seedlings of *lupinus albus* can be used in the diagnosis of leprosy, and will show toxic factors long before actual pathology results. The leaves of certain plants, such as the tomato, droop perceptibly in the presence of traces of carbon monoxide. Thus the botanists have introduced a delicate new instrument into differential diagnosis.

This is the sort of help the chemist has obtained from such organizations as the Boyce-Thompson Institute for Plant Research, and is an example of what can be accomplished when the specialist develops the habit of looking over the fence into his neighbor's specialty. Only thus can the scientist avoid lopsidedness and gain an appreciation of the essential unity of science.

The paper was followed by an animated discussion, in which it was brought out that truly great scientists have often been men of many interests. Such names as Leonardo da Vinci and Sir Humphrey Davy immediately arise.

HOWARD STOERTZ,
Reporter.

Washington Chapter

The Washington Chapter held its May meeting in the board room of the Cosmos Club, Friday, May 12th, at 8:00 P. M.

A plan was adopted for giving medals and junior memberships in the Institute to students who excel in chemistry at each of the local universities.

The present officers were reelected for another year.

J. B. MARTIN,
Reporter.

Niagara Chapter

The third regular meeting of the chapter was called to order by Chairman William J. Cotton at 7:00 P. M., at the Red Coach Inn, Niagara Falls, N. Y., Tuesday, May 23rd. Dinner was followed by a business session and a program of talks.

Invited guests present were G. P. Hoff, of Du Pont; Paul J. Carlisle, of Roessler and Hasslacher; F. de Leeuw, of the Lucidol Corporation; Howard Elden, of Dunlop Tire and Rubber; Raymond Hess, of National Aniline and Chemical; and Arthur J. Norton, of General Plastics.

After the chairman had welcomed the invited guests, the secretary read the consitution of the chapter, as revised by the national council of the Institute. It was moved, seconded, and carried, that this constitution be adopted.

A tellers' committee of Messrs. Williams and Taylor was appointed to collect and count the written ballots for the new slate of chapter officers.

The program consisted of short talks, followed, in each case, by spirited informal discussion. The general topic of the evening was "Industrial Research." Individual topics presented were:

"The Research Problem and Program."—Robert L. Perkins.

"The Research Man."—Maurice C. Taylor.

"The Training of a Research Chemist."—Howard W. Post.

"Research Failures—Correction and Elimination."—Arthur W. Burwell.

"The Selling of a Research Program to a Financial Management."—Arthur J. Norton.

The tellers reported the results of the election as:

Chairman: William J. Cotton
Vice-chairman: Robert L. Perkins
Sec.-Treasurer: Howard W. Post
Councilor: Arthur W. Burwell

The chairman announced that committee appointments would be made later, at a coming meeting of the executive committee.

The chairman commented that there was sentiment in favor of holding the August meeting of the chapter at some recreation center, combining it with a picnic. Dr. Burwell offered the use of his cottage on the lake; and the chairman referred the plans for the meeting to the executive committee. The suggested topic for discussion at the August meeting is "Chemical Patents."

John F. Williams read a communication from the national secretary with regard to a member in Nevada.

HOWARD W. POST,
Secretary.

New Members

FELLOWS

SAMUEL N. CUMMINGS, *President*, Pylam Products Company, 799 Greenwich Street, New York, N. Y.

C. R. HOOVER, *Professor of Chemistry*, Wesleyan University, Middletown, Conn.

EMIL KLARMANN, *Chief Chemist*, Lehn and Fink, Inc., Bloomfield, N. J.

HOWARD OCHS, *Chief Chemist*, John P. Carlson, Inc., 420 Carroll Street, Brooklyn, N. Y.

ALBIN H. WARTH, *Chemical Director*, Crown Cork and Seal Company, Eastern Avenue and Kresson Streets, Baltimore, Md.

NEWS

Unemployment Committee

A luncheon meeting of the Metropolitan Committee on Unemployment and Relief was held at The Chemists' Club on May 16th, with 18 members present.

Chairman Frank G. Breyer, F.A.I.C., stressed the need for a fifth letter of appeal for funds. After discussion it was decided to send one letter to the individuals in the profession, and another to the directors of research laboratories asking their aid in stressing the need of the committee to the members of their staff.

Mr. Breyer presented three needy cases which were awaiting help. Two are to be taken on the committee's payroll by giving them work under the research program, and one is to be provided with transportation for himself and family of four to his home in the state of Washington.

Lewis H. Marks, F.A.I.C., newly elected president of The Chemists' Club, reported that at the last meeting of the trustees the club went on record as sponsoring the committee and has appointed Henry Esberg to represent the club on the committee.

Mr. Breyer read some excerpts from an article appearing in the May 6th issue of *Science News Letter:*

"While over 55 per cent of the research laboratories serving America's industries

have either maintained their staffs or actually increased their workers, there has been a decrease of over 12,000 in the staffs of other industrial laboratories in the past three years. However, 90 per cent of the concerns reporting have maintained at least a skeleton research organization.

". . . 10,000 highly trained industrial scientists are not engaged in scientific research due to the economic depression. The potential value of the lost services of these scientists must run into millions of dollars annually. Some of these scientifically trained workers have been transferred to plant and sales jobs."

Mellon Institute Report

E. R. Weidlein, F.A.I.C., director of Mellon Institute for Industrial Research, has issued in booklet form an abstract of his twentieth annual report to the trustees of the institution.

The report describes some of the more important work done during the past year by the holders of the 67 industrial fellowships, and gives a list of the fellowships, with their holders, as well as a general survey of the present condition of the Institute.

In his preliminary remarks, discussing the state of industrial research in general, Dr. Weidlein states that "A few laboratories, forced to cut their operating expenses by laying off part of their personnel, have been able, by judicious elimination, to prevent losses in the productivity of their staffs. In most instances, however, the ordeal of reduction has diminished research power. . . .

"Metallurgical and ceramic laboratories have suffered the most, and food, textile, and pharmaceutical laboratories have been affected the least, by economic changes. Throughout the year many metallurgists, ceramists, fuel specialists, and lately graduated chemists and chemical engineers have been out of employment, whereas capable food, textile, leather, plastics, and pharmaceutical research specialists have been too few for the needs of the industries concerned."

Mellon Institute will supply copies of the report upon request.

Foster D. Snell Move

The offices and laboratories of Foster D. Snell, Inc., have been moved to larger quarters at 305 Washington Street, Brooklyn, N. Y.

The ninth floor of the new building has been remodeled to give a well-integrated laboratory with suitable units for research, microscopy, library, apparatus and chemical storage, industrial development, pilot-plant work, testing, and analysis. The executive offices are on the sixth floor of the same building.

LeRoy Seidell, F.A.I.C., died on April 20th, after an illness of several months. Mrs. Seidell and three children survive him.

A graduate of Pennsylvania State College, he specialized in metals and metallurgy; and following his war work he and his associates established the New York Testing Laboratories. This enterprise, by energetic and untiring effort, and with Dr. Seidell's guidance as president, has met with marked success.

Dr. Seidell was a charter member of The American Institute of Chemists, and was secretary during the trying formative years of 1924–1928. Much of the credit for the staunchness of the Institute should go to him. The Institute has lost a valued and highly esteemed friend and member, and the profession of chemistry has lost an enthusiastic, indefatigable, and conscientious worker and investigator.

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